

KATHREIN

User manual

Euroline[®]

UFE 305/S DVB-S receiver



Order Number: 20210049

KATHREIN

Antennen · Electronic

Dear customer,

This user manual will help you make the best use of the many functions your new satellite receiver offers.

We have composed the instructions as plain and short as possible.

To spend only a minimum of electricity in case you are absent for any length of time, please turn off the receiver with the power switch.

We trust your receiver will always provide high-quality reception and wish you much pleasure with it.

The KATHREIN Euroline® team

Important notes

If you have – against our expectations - any trouble with your receiver, please contact your local dealer.

Important notes

The programme allocation of the satellites and the transponders is changed from time to time. Consequently, it is necessary to reallocate the programmes in such a case, although the factory-set pre-programming is in each case kept up to date..

Refer to the videotext pages of the German programme provider SAT 1, the Internet, or the appropriate professional journals to obtain the particulars you need to carry out such a reset. Find further information in chapter 'pre-programming'.

Your receiver was factory-set with the latest software version in each case. However, we are always working to adapt the software to meet our customers' requirements and the best available technology.

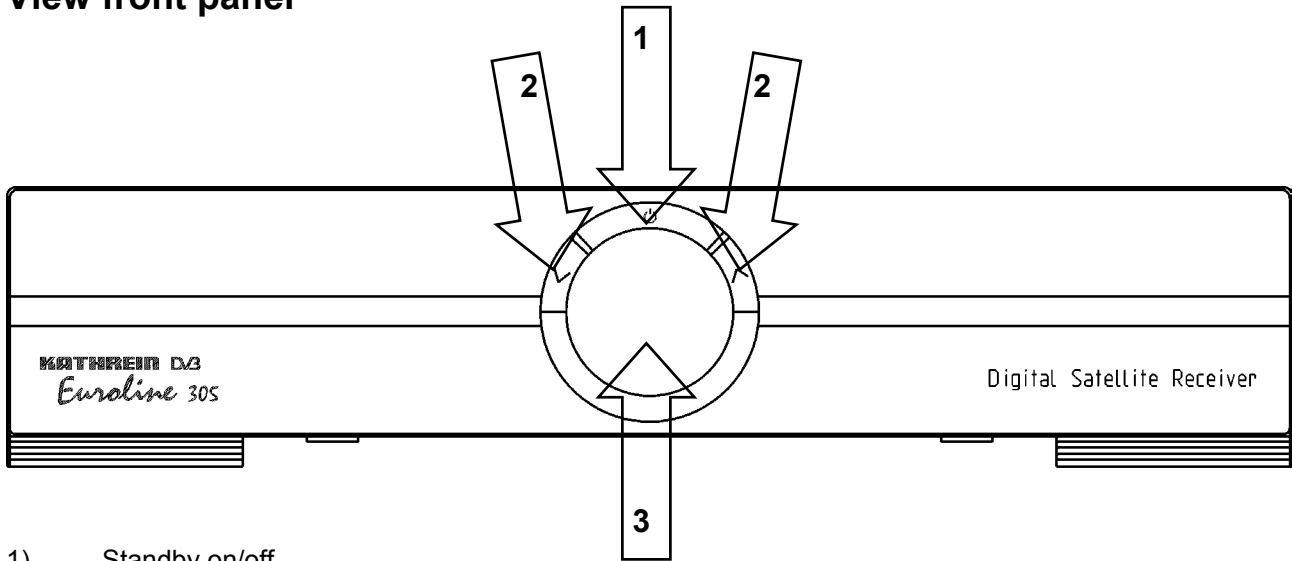
Please retain the original packaging in case you have to return the receiver!

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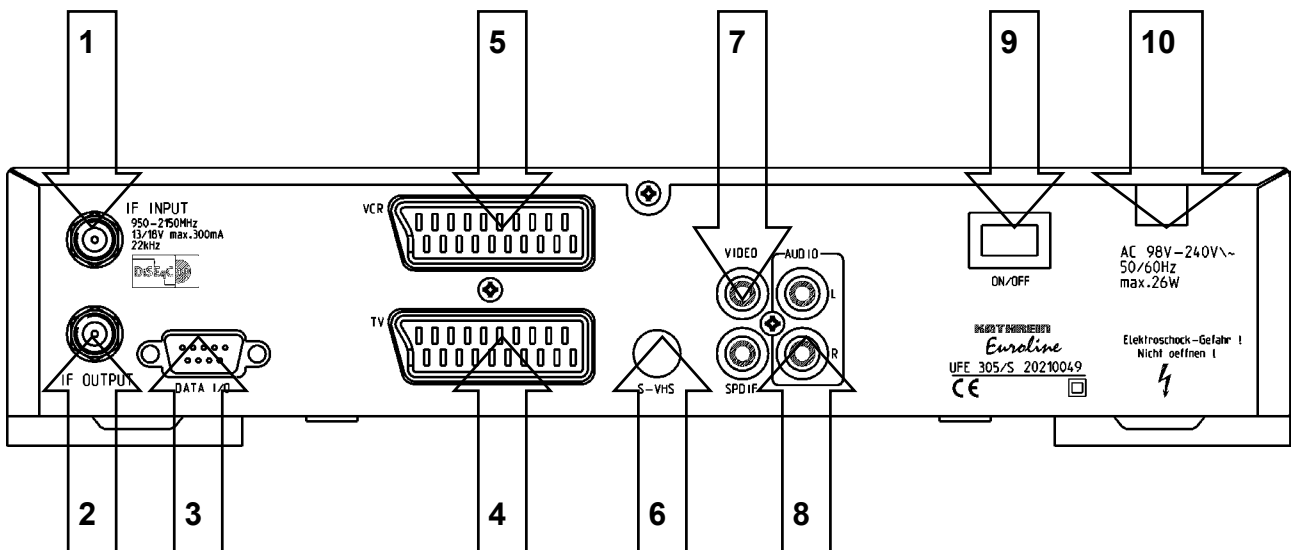
Control elements and connections

View front panel



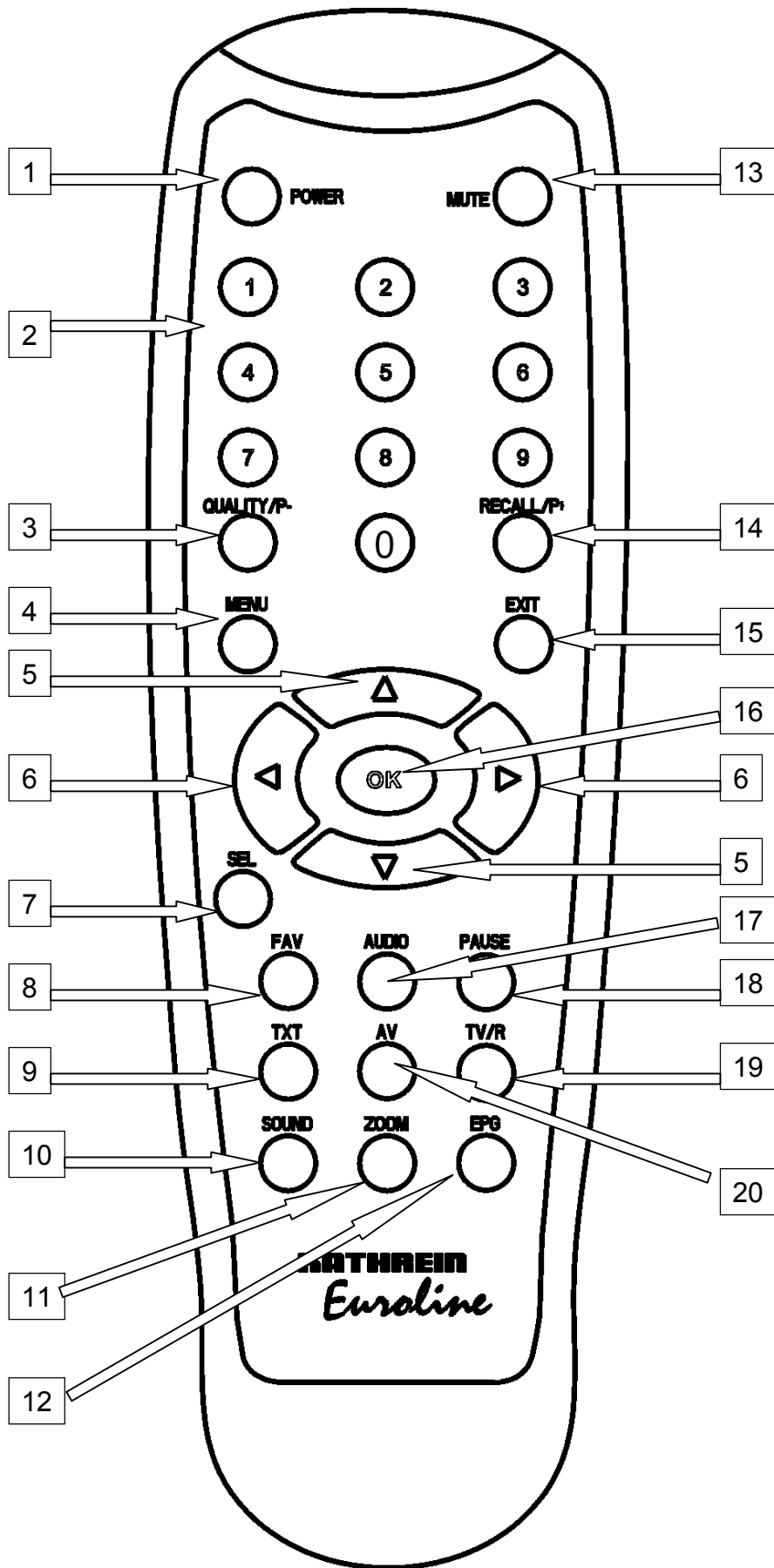
- 1) Standby on/off
- 2) Selecting programmes one after the other
- 3) Programme display

View back panel



- 1) SAT-IF input socket
- 2) SAT-IF output (loop-through signal)
- 3) RS 232 serial interface for updates or repairs (to be used only in connection with a specific connection cable)
- 4) TV set Scart connection
- 5) Video recorder Scart connection
- 6) S-VHS output
- 7) Video-output-Cinch-socket
- 8) Audio outputs for the stereo (left and right) Cinch sockets
- 9) Power switch (on/off)
- 10) Power supply cable

Remote control



Keys on the remote control

- 1) **POWER:**
To turn on/off (off = standby mode) the receiver
- 2) **Number keys (0-9):**
To enter the programme positions or menu parameters
- 3) **QUALITY/P-:**
To have information on the current programme, satellite and/or programme position etc. displayed. To be used also for the antenna alignment and to change the pages (-) in the programme lists
- 4) **MENU:**
To call up the main menu
- 5) **Up/down:**
To change the programme and/or swap in the individual menus
- 6) **Left/right:**
To control the volume and/or swap in the individual menus
- 7) **SEL:**
To have the list of the active satellites displayed
- 8) **FAV:**
To have the favourite programme lists displayed (press this key several times to have the individual lists displayed)
- 9) **TXT:**
To have detailed information on the current programme displayed (this information can also be obtained in the EPG menu).
- 10) **SOUND:**
To choose between left/right/stereo and actuate the blue control key in the OSD
- 11) **ZOOM:**
To zoom and zoom out the picture size
- 12) **EPG:**
Electronical programme guide and yellow function key in the menus. Press this key to call up the EPG (unless data not available)
- 13) **MUTE:**
Mute function
- 14) **RECALL/P+:**
Recalls the programme last running (i.e. the programme last chosen from the list) (+)
- 15) **EXIT:**
To either exit the menu or change from one submenu to another menu item
- 16) **OK:**
Press this key either to have the programme lists displayed or to confirm the options in the individual menu items
- 17) **AUDIO:**
To select the language or audio channel for multi-lingual programmes
- 18) **PAUSE:**
Freeze image
- 19) **TV/R:**
To switch between radio and TV mode
- 20) **AV:**
To control the TV Scart socket (Pin 8) between TV/Sat reception

How to use the remote control

Press **OK** to confirm the settings in the individual menu items or to call up their submenus.

Change the settings line by line each, and confirm your entries by pressing **OK**.

Press **EXIT** to exit the menu, or to swap from a submenu to another menu item.

Press **▲ / ▼** to swap in the menu items. Press **◀ / ▶** to change the settings in the individual fields. You can also change the settings using the number keys.

The coloured keys are used for the functions in the individual submenus. The respective functions in the individual menu items are displayed on the screen.

Each of these functions is explained at the bottom of the screen.

Inserting Batteries in the Remote Control

Remove the cover on the rear of the remote control. Insert the two batteries supplied into the remote control, ensuring correct polarity which is shown on the base of the battery compartment. Slide the cover back onto the housing until it locks in place.



Used batteries are special waste. Do not throw used batteries into your household waste; take them to a collection point for old batteries!

Electronic equipment is not household waste - in accordance with directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL dated 27th January 2003 on used electrical and electronic equipment, it must be disposed of properly.

At the end of its service life, take this unit for disposal at a designated public collection point.

Safety instructions

This page contains important information about the operation, installation location and connection of the unit.

Read these instructions carefully before starting to use the unit.



DANGER!

Mains cable

Make sure that the mains cable (power supply cable) is not damaged. Units with a damaged mains cable must be disconnected from the mains (disconnect mains connector) and repaired by a qualified engineer before setup. Only use the power pack supplied (if available).

Risk of death due to electric shock.

Cleaning

Disconnect the mains connector before cleaning the unit. Only use a dry cloth for cleaning and only clean the outer surface. Never open the unit.

Touching the parts inside the unit carries a risk of death due to electric shock.

Playing children

Make sure that children do not push any objects into the ventilation slots.

Risk of death due to electric shock.

Earth connection

The antenna system must be earthed as specified or equipotentially bonded. EN 60728/11 and any national regulations must be complied with.

Danger due to surge voltages, lightning strikes.

Mains voltage

Only operate the unit with the specified mains voltage (marked on the rear of the unit or on the external power pack). The unit may only be connected to the mains and turned on once it has been connected to the antenna and to the TV set or the cable network and PC.

If the mains voltage is too high, there is a risk of fire.

Repairs

Ensure that any repairs to your unit are carried out by qualified personnel. Opening the unit and attempting to repair it yourself voids all warranty claims. Improper work on the unit can jeopardise the electrical safety of the unit.

The manufacturer accepts no liability for accidents caused by the user opening the unit.

Connections

Incorrect wiring of the connections can lead to malfunctions or defects on the unit.

Long periods of absence / storms

Always turn off the unit at the mains switch if you will be absent for a long time or there is a storm. If your unit does not have a mains switch, you can disconnect it from the mains by unplugging the mains connector. This also applies to the other equipment connected to the unit. Isolation from the cable network is also recommended. Note any timer programs (receiver) and turn the unit on again promptly before the recording time.

Installation location

All electronic equipment generates heat. However, the heating of this unit lies within the permissible range. Sensitive furniture surfaces and veneers may become discoloured by the effects of constant heat over time. The feet of the unit can also cause colour changes to treated furniture surfaces. If necessary, place the unit on a suitable stable and flat base.

Ventilation

The heat generated in this unit is adequately dissipated. However, the unit should never be installed in a cupboard or on shelves with inadequate ventilation. Never cover the cooling slots on the unit (e.g. with other equipment, magazines, tablecloths or curtains).

Do not place any objects on top of the unit and maintain a clearance of at least 10 cm above the unit, so that the heat generated can be dissipated with no obstructions.

Moisture, sunlight, heat

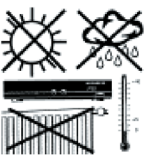
Protect the unit against moisture, dripping and splashed water (do not place any filled objects such as vases on top of the unit). Do not place the unit close to a heater or expose it to direct sunlight and do not operate it in damp locations. Only use the unit in a moderate climate, not in tropical conditions.



WARNING!



CAUTION!



Programme selection

The receiver is factory pre-programmed with most of the common satellites. In order to be able to receive properly, of course, you should have aligned the antenna onto at least one of these satellites.

Press **SEL** in order to call up the list of the pre-programmed satellites.

Select a satellite, and press **OK**. The receiver now shows all the programmes transmitted over this satellite.

There is no printed programme list included in the scope of delivery.



Select the desired programme using the **▲/▼** keys, and press **OK**.

Note:

*Alternatively, you can call up the programme list of a satellite by pressing **OK** immediately.*

To choose a programme, enter its position using the number keys on the remote control.

Press **TV/R** to change from the TV programme list to the radio programme list, press **FAV** to call up a favourite list. (4 lists).

Swap through these lists using either the **Quality/P** key, the **Recall/P+** key or the **◀/▶** keys. Press **EXIT** so that the lists disappear.

Programme information



The following information is displayed when you change the programme:

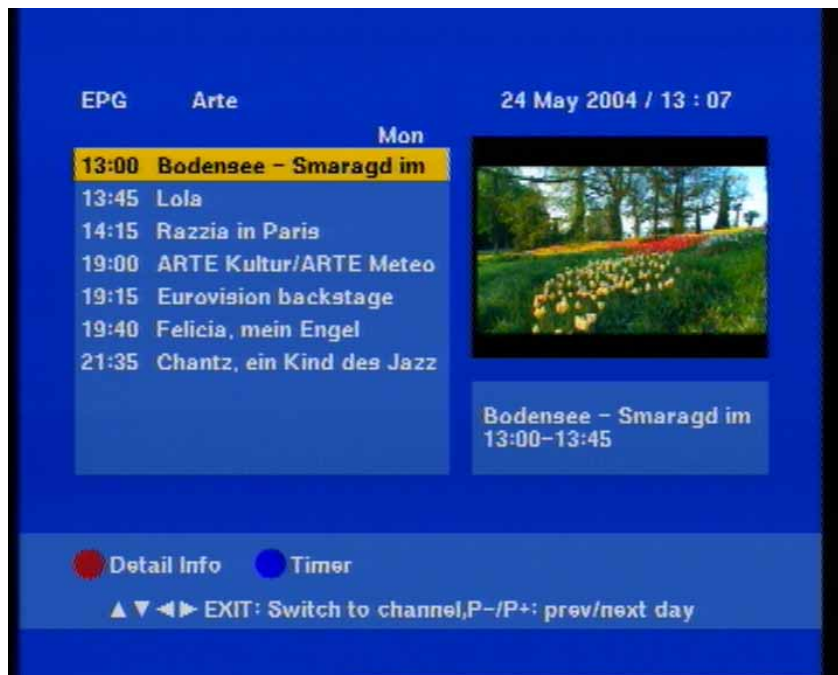
- Whether it is a TV or a radio programme
- Name and position of the programme
- Whether EPG data is available (electronic programme guide), indicated with the letter 'E'
- Videotext reception, indicated with the letter 'T'
- The current programme, the time and the satellite name

Videotext

Unless it is not available, the receiver continuously delivers the videotext signal to the TV set.

You can call up and use the videotext with the remote control of your TV set, as usual.

Electronic programme guide (EPG)



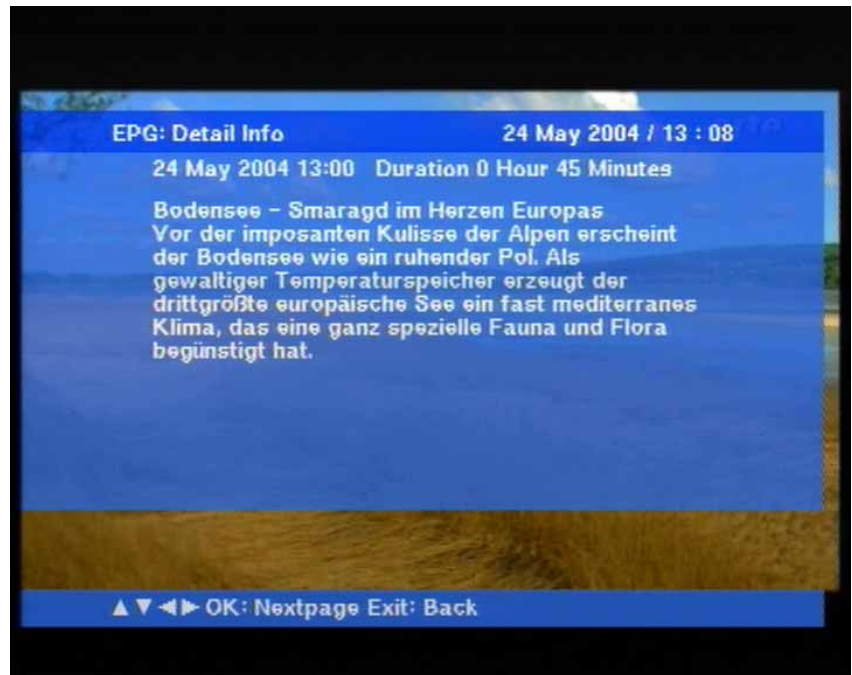
Press **EPG** to call up information on a programme/, provided that this information is broadcast by the programme provider.

Press **▲/▼** to swap between the displayed broadcasts.

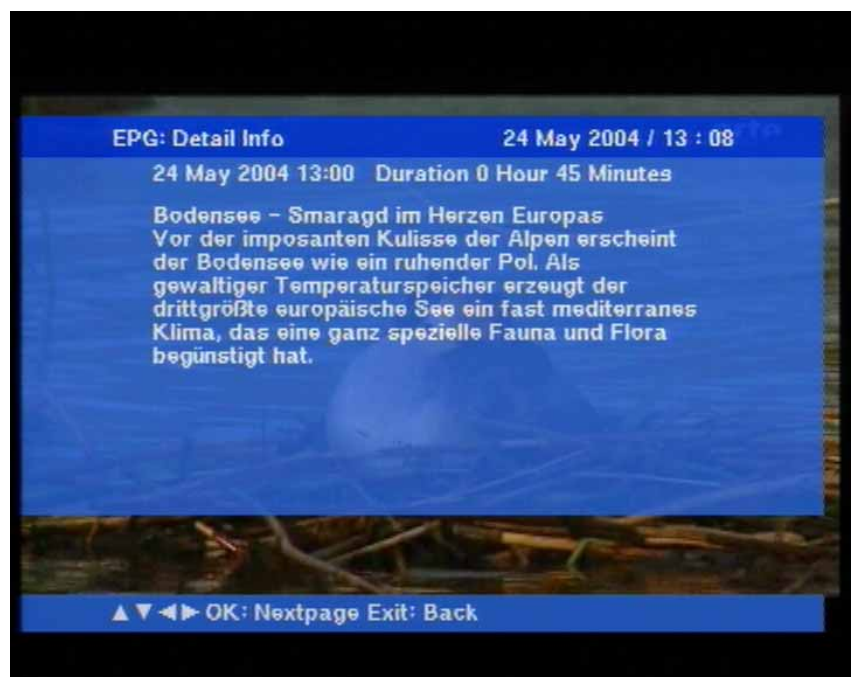
To get to the following/previous day, press either **Recall/P+** or **Quality/P-**.

To program a broadcast to be recorded automatically, press the **blue** key: The timer is then automatically set.

In order to have the details shown in the EPG (extended mode), press the **red** key. The following will be displayed on the screen:



You can alternatively obtain the details on the current broadcast/programme if you press the **red** key while watching this broadcast/programme. Then, the information on the current broadcast/programme is directly displayed on the screen. This means, you do not necessarily have to switch to EPG mode (see fig.).



Note:

In order to load the information on the broadcast/programme, the corresponding broadcast/programme should be switched on for some moments.

Have the details on a broadcast/programme (extended mode) displayed by pressing the **red** key while watching this broadcast/programme. In this mode, detailed information on the current broadcast/programme is displayed. In the background, you can still see the broadcast.

Audio

Press **Audio** to have the sound (TV or radio) which is transmitted over the receiving channel indicated.

Select the sound and confirm your selection with **OK**. If the station does not transmit any information on the language(s) in which the broadcast is transmitted, the receiver displays 'unknown'. Press **SOUND** to change between left/right/stereo.



Pause and zoom

These keys serve for the zooming or freezing of the TV picture.

The Quality key (auxiliary function to align the antenna)

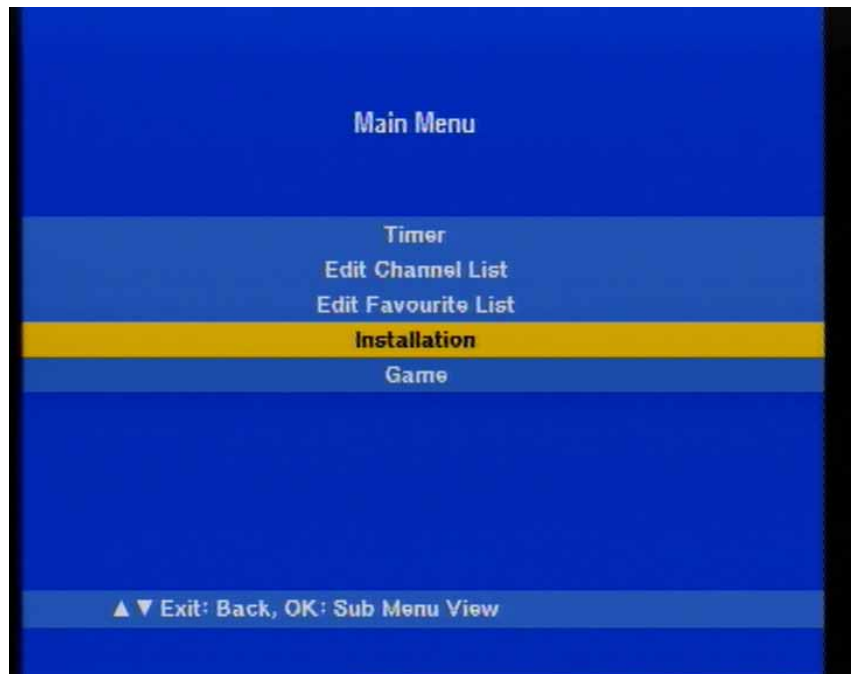
The receiver not only indicates the reception strength and quality, but also provides an auxiliary function (sound signal) to align the antenna: Switch the receiver to the desired satellite programme (e.g. Astra 19.2°: programmes 1 to 100), and press the **Quality** key.

As soon as you have pressed this key, the receiver will emit a sound signal, the frequency and repetitiveness of which correspond to the receive signal.



Calling up the main menu (MENU key)

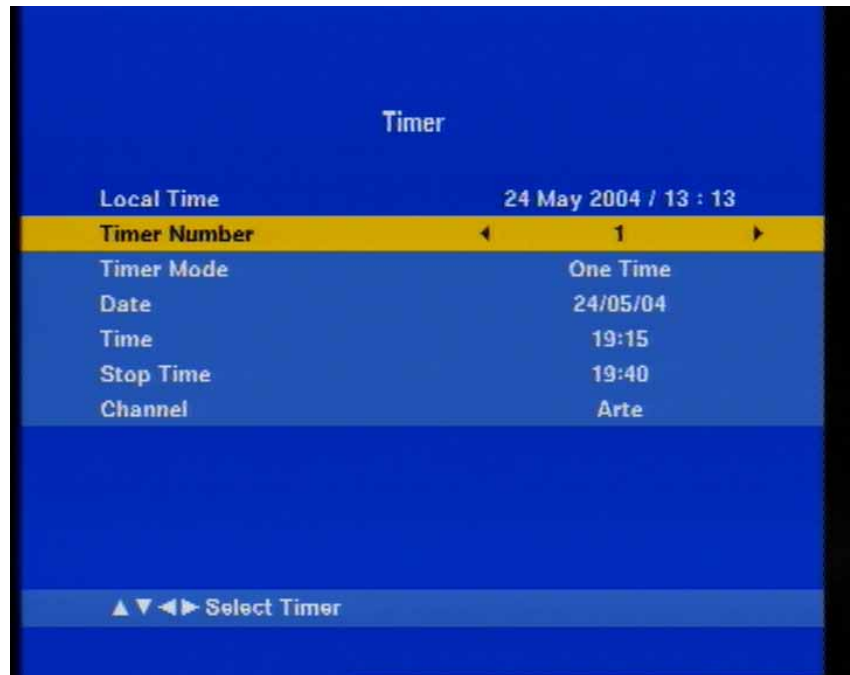
Press **MENU** to call up the main menu, select the desired submenu, and press **OK**.



There are five different submenus, which are explained in the following:

- 1) **Timer**
Menu item to set time-delayed recordings or stop recordings automatically
- 2) **Programm list editing**
To sort, process or remove channels
- 3) **Favourite list editing**
To organise the channels (saving, sorting, processing and shifting)
- 4) **Installation**
To set the LNB and antenna parameters, for the search function (required for the initial setting or when you replace the antenna), to adjust the system and lock channels (child lock)
- 5) **Games**
There are two games available

Timer setting (automatical programming)



Note:

The timer may either be programmed via the electronic programme guide 'EPG' (see page 13), or as described in the following.

The clock must be correctly set so that the timer is functional (see 'Installation menu/adjust system/set time').

Program the event number (1 to 8), activate the timer to set and confirm the programming.

1. Press **OK** in the field 'date' to select the date.
2. Now a calendar is displayed, and you can select the desired date using the **▲/▼** **◀/▶** keys.
3. Press **OK** to confirm your selection.
=> alternatively: Get to the date field, select day, month, year with **◀/▶** and enter the desired figures with the number keys.
4. Then choose the appropriate start and end time, as well as the correct programme position. To select the programme, press **OK** in the field 'Channel'. Now the programme list is displayed, and you can choose the desired programme using the **▲/▼** keys.
5. Press **OK** to confirm your selection and take it over in the timer.

Organising the programmes and favourites



Sorting:

1. Press 'Menu' to call up the receiver menu.
2. Select menu item 'Programme list editing' and confirm this item with 'OK'.
3. Now scroll to the programme you want to shift using the cursor keys (the programme is then highlighted in yellow).
4. Now press the red key 'sort' and then the yellow key 'manually'.
5. When 'shift to...' is displayed, enter the desired programme position using the number keys, and confirm your entry with 'OK'.
6. Now press 'Exit' to exit the menu.
7. When 'Store sorting?' is displayed, press 'OK' to store the sorting.
8. The PIN must be entered with the number keys (the combination of numbers '0000' is factory preset).
9. Now press 'Exit' to exit the menu.

Attention!

Confirming a sorting means that the previous list can no more be accessed.

Favourite:

1. Press 'Menu' to call up the receiver menu.
2. Select menu item 'Programme list editing' and confirm this item with 'OK'.
3. Now press the blue key to access the menu 'Favourite'.
4. Now the four favourite lists are displayed.
5. Use the ▲/▼ keys to change between the displayed programmes (the selected programme is highlighted in yellow).
6. Now you can assign the selected programme to the individual favourite lists by pressing the key which has the same colour as the desired favourite list.
7. After you pressed the desired coloured key, the number of the set favourite list is indicated behind the displayed programme position (to cancel this selection, just press the same coloured key as before once again). You can also assign each programme to all four favourite lists.
8. Now you can exit the menu by pressing 'Exit'.

Editing:

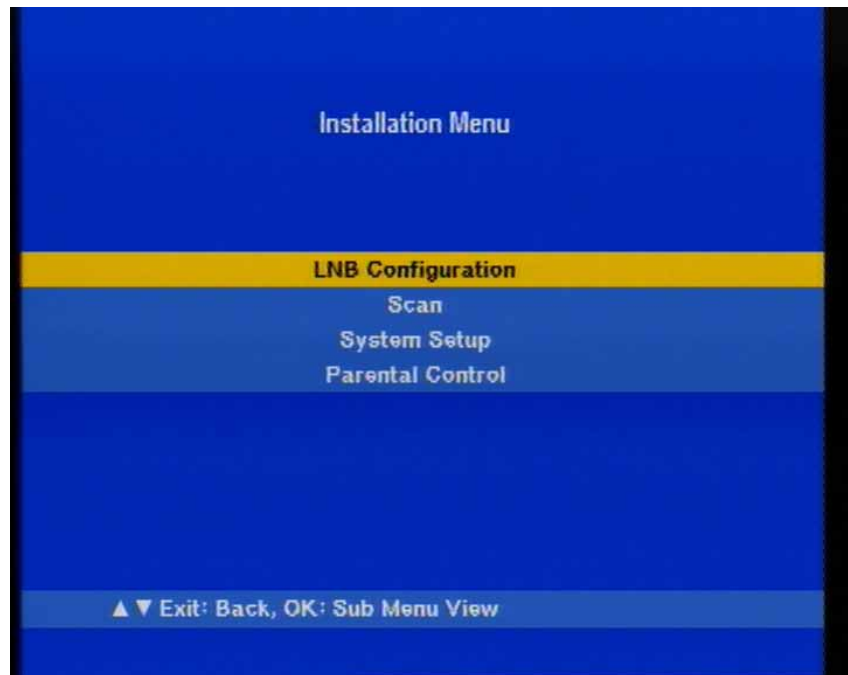
1. Press 'Menu' to call up the receiver menu.
2. Select menu item 'Programme list editing' and confirm this item with 'OK'.
3. Now press the green key to access menu item 'processing/editing'.
4. Use the ▲/▼ keys to change between the displayed programmes (the selected programme is highlighted in yellow).
5. Now there are two options:
 - lock a programme by pressing the red key (you are prompted to enter a PIN code), or
 - skip a programme by pressing the blue key.
6. To cancel the locking or skipping of a programme, just press the same coloured key as before once again.
7. Now you can exit the menu by pressing 'Exit'.

Deleting/removing:

1. Press 'Menu' to call up the receiver menu.
2. Select menu item 'Programme list editing' and confirm this item with 'OK'.
3. Now press the yellow key to access menu item 'Deleting/removing'.
4. Use the ▲/▼ keys to change between the displayed programmes (the selected programme is highlighted in yellow).
5. To delete/remove, press the red key (behind the programme to be deleted/removed, an 'X' appears).
6. Press the 'Menu' key to delete/remove the selected programme and get back to the main menu.
7. To delete/remove all the programmes transmitted over a satellite, press the blue key (a warning notice is displayed) and confirm your selection with 'OK'.
8. You are now prompted to enter your PIN, and confirm your entry with 'OK'. If you want to leave the menu as it is (unchanged), press 'Exit'.

Note:

Attention: If a channel/programme is deleted, you have to carry out a channel/programme search to be able to receive it again.



Adjusting the receiver to your satellite reception installation:

1) **LNB configuration**

Enter information on the antenna (satellite, LO frequency, LNB voltage, availability of a DiSEqC™ switch, DiSEqC™ entry, repeat DiSEqC™)

2) **Search**

Search for a transponder or entire satellite; FTA programmes only or both encoded and FTA programmes

3) **System set-up**

Adjust your TV set and make more individual settings or a reset to the factory settings: You can restore the factory settings your receiver was delivered with.

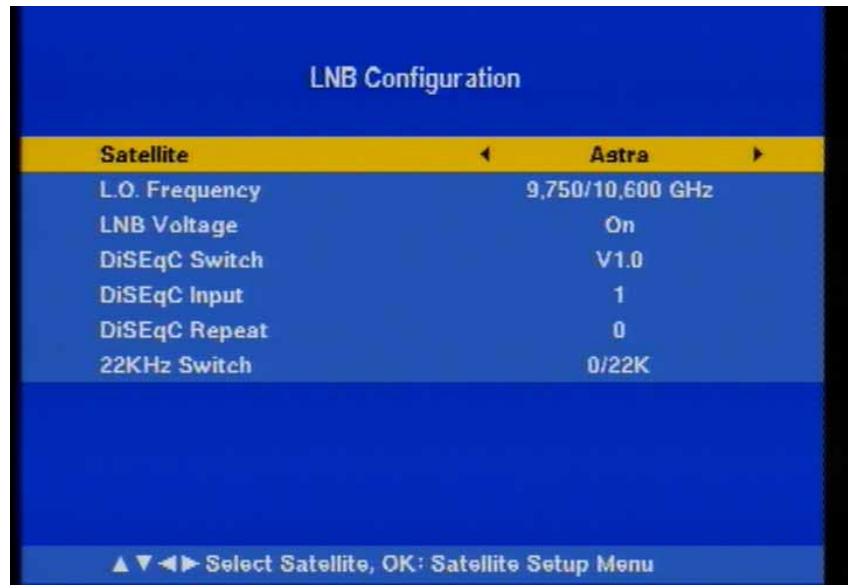
Attention!

When you do this, all changes you may have made to the programming of the receiver will be deleted.

4) **Child lock/parental control**

Block the access to certain menus and change the password

Adjusting the LNB



In this menu, you can configure your receiver for your antenna:

- Select LNB type (standard-programming for universal LNBs)
- LNB supply voltage
- DiSEqC™ switch V1.0
- DiSEqC™ entry
- Repeat DiSEqC™: If the receiver is operated on a reception installation with one or more cascaded DiSEqC™ switching matrix (matrices), the DiSEqC™ command must be repeated. In this case, switch to '1' or '2' in menu item 'repeat DiSEqC™'
- 22 kHz switch: In this menu item, you can determine whether the 22 kHz signal is to be used to switch between the high and low band of a satellite or between two satellite positions.

The receiver is pre-programmed and delivered with an installation menu which is protected with the password '0000'.

Search (adjusting a channel)

Programme search:

Note:

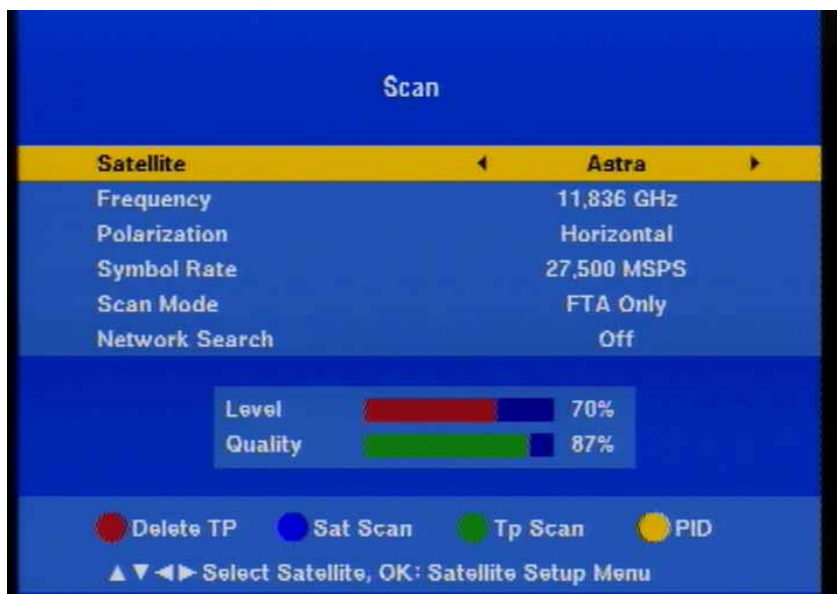
The receiver indicates not only the reception strength and quality, but also provides an auxiliary function (sound signal) to align the antenna. In menu item 'search', you can activate this auxiliary function with the mute key.

You can delete a transponder using the red key 'delete TP'. Start the programme search over the entire satellite with the blue key, start the search for a specific transponder with the green key.

The receiver prompts you to confirm that you want to delete/remove the existing programmes. If you confirm this with 'Yes', all the programmes assigned to this satellite or transponder will be deleted/removed, the new assignment will be entered in the main list. However, if you enter 'EXIT' instead of 'Yes', the search will not be started.

PID entry (Programm Identification):

Press the yellow key, enter both the video and audio PIDs, then press the yellow key again. The programme, named 'TV CH', will be placed on the end of the main list.



Although the receiver is pre-programmed, it may be necessary to update the programme list, add further transponders, or to program other satellites.

Installation menu

In this menu, you can carry out the search

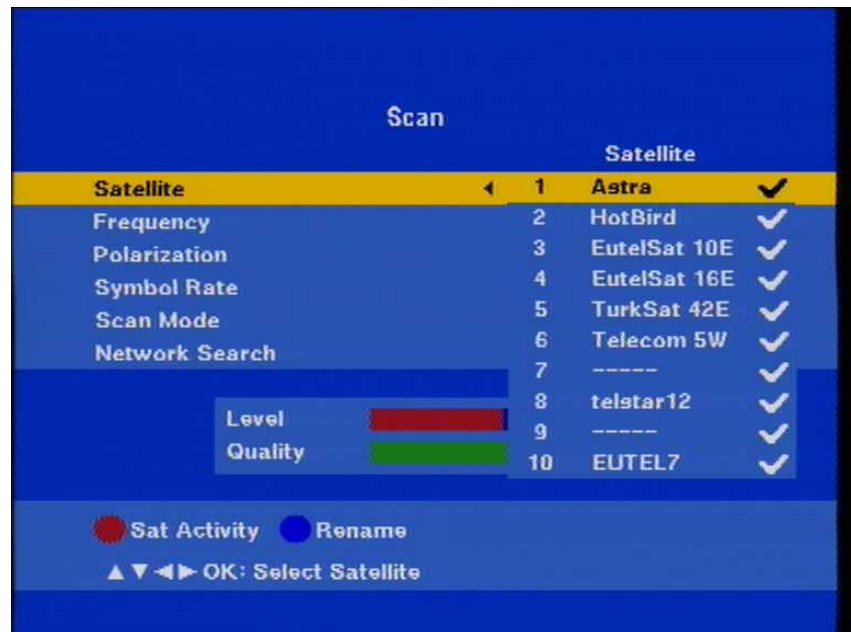
1) Satellite search

Press **OK** to have the satellite list displayed, then select a satellite. You may also enter a new satellite. The required steps are all indicated in line 'Help'. Up to 16 satellites at max. can be entered.

Recommendation:

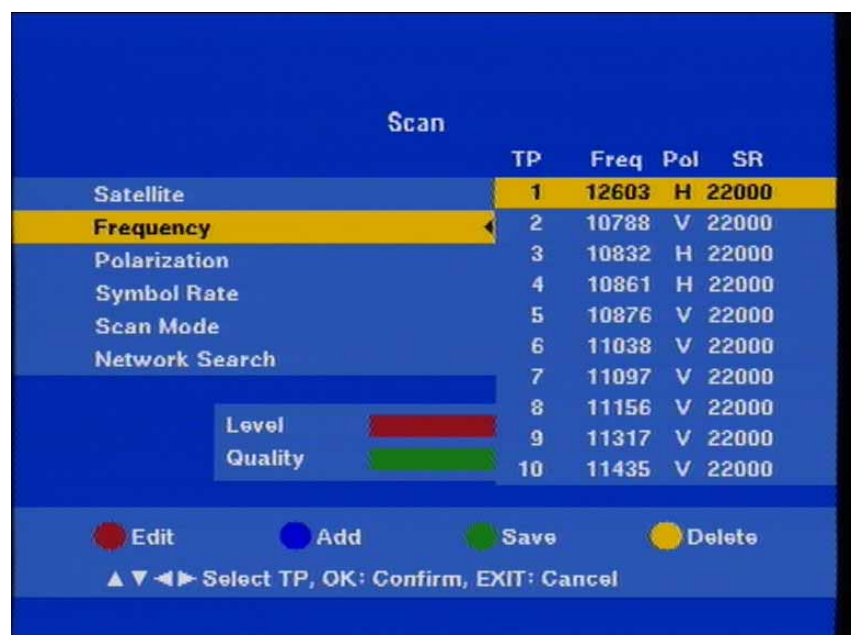
When to start the satellite search?

If you do not know the transponder frequency needed to search for a certain programme.



2) Frequency, polarisation, input-symbol-rate

Display of the parameters of the used transponder. Press **OK** to have the transponder list displayed

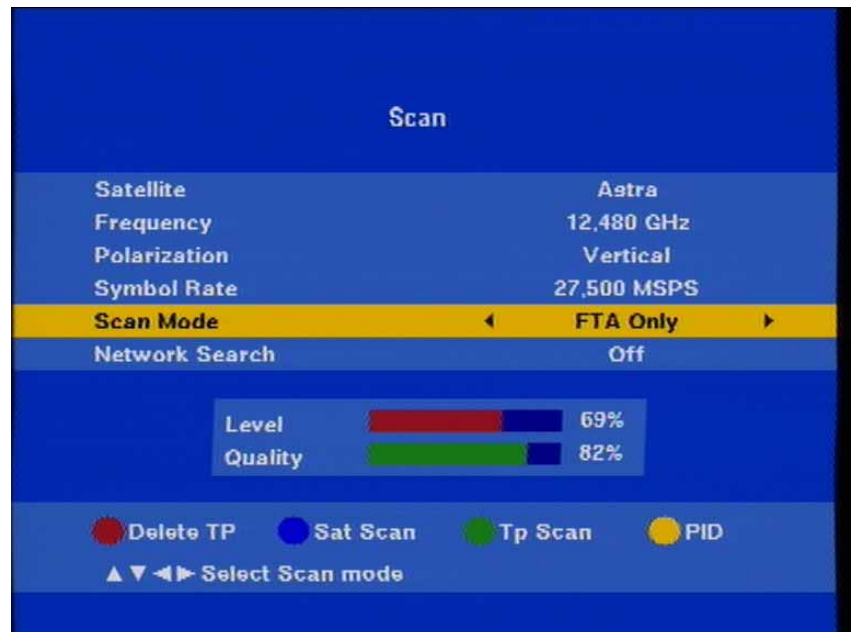


Searching for a new programme via a transponder search

1. Press 'Menu' on your remote control.
2. Select menu item 'Installation', confirm with 'OK'.
3. Then select menu item 'Search', confirm with 'OK'.
4. Now select the desired satellite using the 'left-right' keys.
5. Select 'frequency', and press 'OK'.
6. Now press the blue key 'Add'.
7. Now, the frequency, polarity and symbol rate must be entered.
8. Store your settings by pressing the green key.
9. Press 'OK' to confirm.
10. Switch menu item 'Search network' to 'Off'.
11. Press the green key ('TP') to start the transponder search. Again, confirm with 'OK'.
12. Now the transponder is searched, and the programmes are added on the **end** of the programme list.
13. Press 'Exit' to exit the menu again.

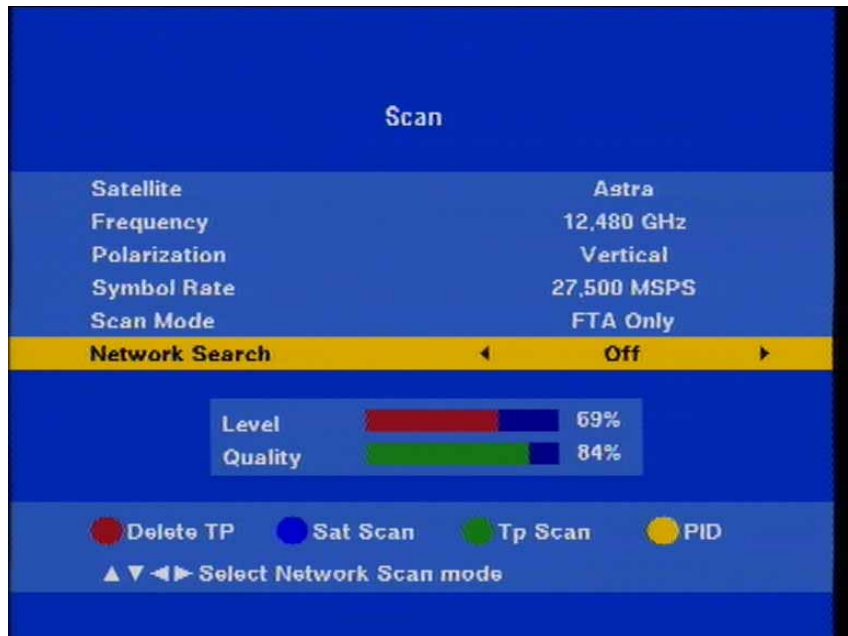
3) Search mode

Selecting the type of search: Searching for any programme or only FTA (uncoded) programmes - if you search for any programme, all programmes, inclusive of the encoded ones, will be stored. Otherwise, merely the FTA programmes will be stored.



4) Network search

If you choose 'Yes', the receiver automatically receives the transponder frequency tables (if available) and adds them to the transponder list for the search.



Note:

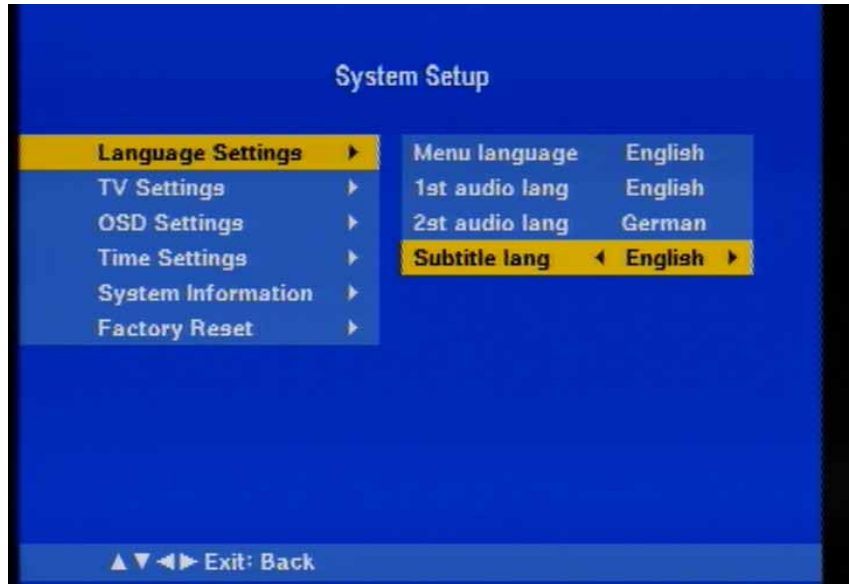
For some of the satellites, these indications are not concordant with the actual data. Consequently, using this function may lead to faults.

Installation menu

System setup

Setting the language

Access to the language menu: German, French, Italian, Spanish and English. Also, the favourite languages for audio and subtitles can be chosen here.



TV setting (TV parameters)

Selection of the video output standard (PAL, NTSC, SECAM, AUTO), screen format (4/3 or 16/9) and output signal on the TV output: CVBS: composite colour video signal

Note:

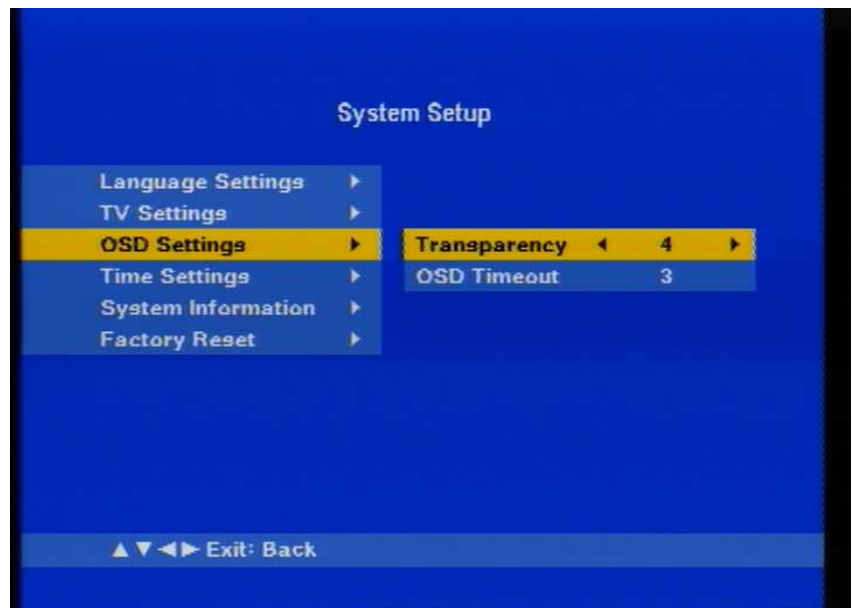
Selecting the screen format (4/3 or 16/9) always goes by your TV set, not by the programme that you chose to watch!



Installation menu

OSD setting (menu display)

Selection of the individual display parameters:

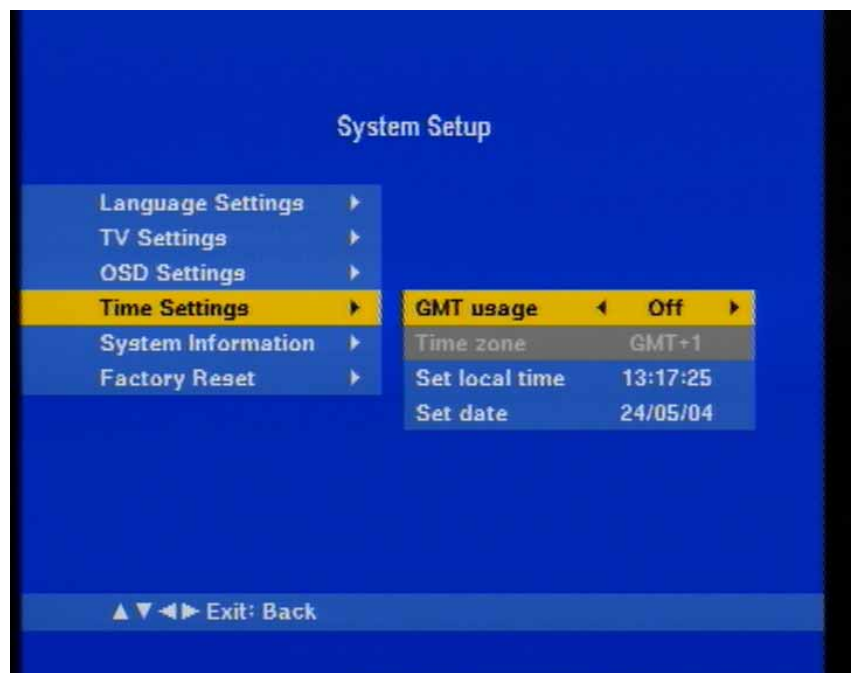


Setting the time (clock parameters)

The time and date must be programmed, so that the receiver shows the correct data in the information messages or when you use the timer for recordings, and in standby mode on the display on the front panel.

The clock can be set as follows:

- The time of day transmitted by the satellite can be used (default setting). However, the time difference between GMT and local time must be taken into consideration (Germany + 2 hrs. in summer, + 1 hr. in winter).
- If you select 'Off' in the first field, you have to enter the time and date manually.



Installation menu

Note:

Some programmes may not transmit the correct GMT. In this case, the receiver displays the wrong time of day. To have the correct time of day displayed again, change to another European programme, and wait a few minutes until the receiver shows the correct time again.

System informationen

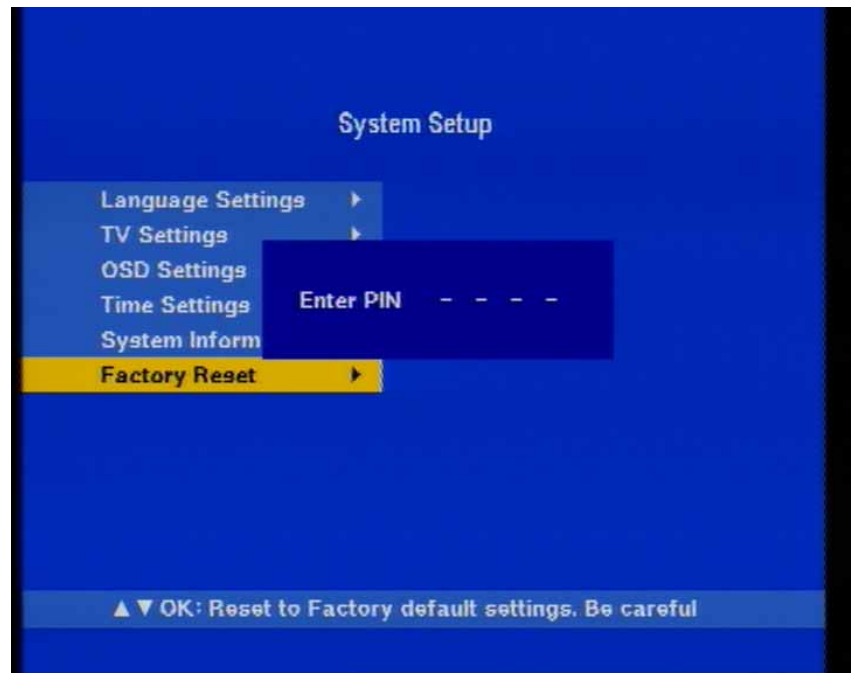
The hardware and software versions of the receiver are displayed.

Reset to the factory settings

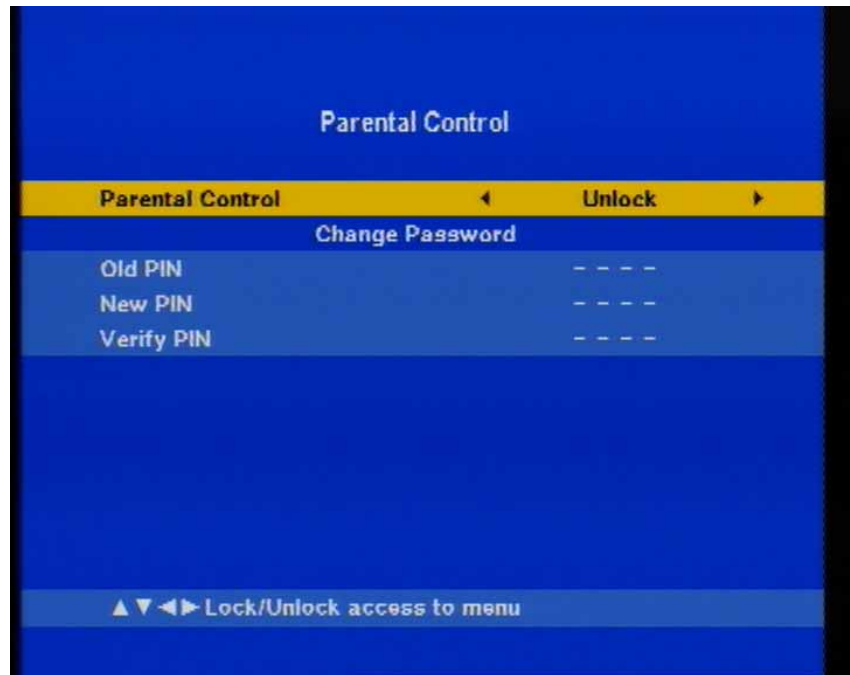
This menu is protected with the password '0000'. If you had changed the receiver programming, and want to reset it to the factory setting, select this item. Press **OK** and enter the password. The memory will be updated after about one minute; turn off the receiver with the power switch, and turn it on again. Select the desired menu language, and confirm this language with **OK**.

Attention:

The receiver is reset to the factory setting; all changes you may have made are lost. The programme list, too, is reset to the factor setting.



Child lock



In this menu, you can block the menus to prevent any inadvertent wrong settings.

To activate the child lock, you must block each menu.

Attention:

Always make a note if you change the password. If you forget the password, this will result in repair work at the factory which is not covered by the guarantee.

Software update

Attention:

You need a PC and a null modem cable to carry out updates!

If new software for your DVB-S receiver should be available, you can download it from the following homepage:

<http://www.kathrein.de/de/sat/news/update.htm>

On this homepage, you will also find information and notes on the software update process via the RS 232 interface on the receiver. You can order the required null modem cable at our factory service centre ESC in Grassau, under the following address:

ESC Electronic Service
Chiemgau GmbH
Bahnhofstraße 108

83224 Grassau GERMANY

Tel.: +49 (0)8641 9545-0
Fax.: +49 (0)8641 954535 or 954536
E-Mail: service@esc-kathrein.de
Internet: <http://www.esc-kathrein.de>

Note:

*After a software download, you must reset the receiver to the factory setting. Your old password will no longer be valid after a software update. You must now enter the universal password (0786). Find out on page **Fehler! Textmarke nicht definiert.** how to carry out the reset to the factory setting.*

Games

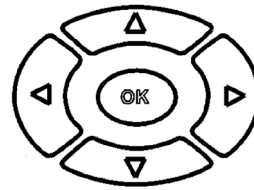
Use the ▲/▼ keys to select 'Game' in the main menu, and press **OK**.
The following is displayed:



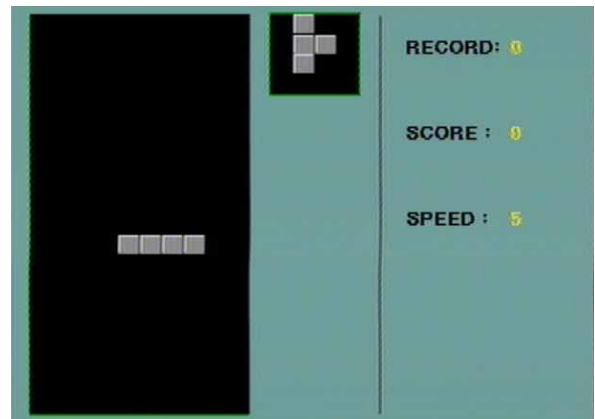
Now you can choose one of the two games listed.

Note:

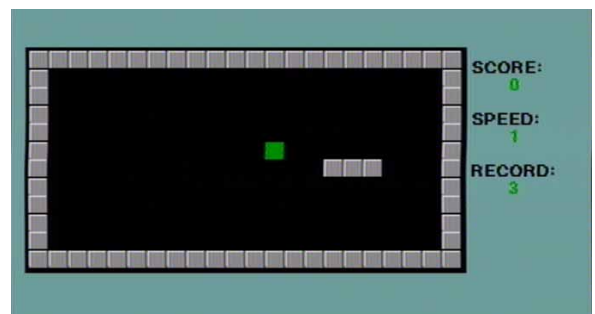
*Please follow the on-screen notes when you have chosen a game.
Both games are controlled with the following keys:*



Tetris



Snake




Functions and technical data

- Reception of FTA digital satellite TV and radio programmes
- 4,000 programme memory positions (1,000 of them pre-programmed)
- Software updates via PC (RS 232)
- Automatic transponder and satellite search
- Manual entry of PID data
- Electronic programme guide (EPG), showing information on current and succeeding programmes with 'detailed information' (content dependent on the programme providers)
- Intuitive-use menu and programme list handling
- Timer programming for up to 8 programmes
- 4 favourite lists
- Language selection for multi-lingual programmes and selection of additional radio programmes
- Videotext generation (display on TV set)
- On-screen display in 5 languages (D, GB, I, E, F)
- Volume control and mute function
- TV Scart socket (composite colour and RGB signal)
- VCR Scart socket (composite colour signal)
- Video Cinch socket
- 2 audio Cinch sockets (left and right)
- Cinch socket for audio digital (SPDIF) 2.0 stereo
- S-VHS output
- Signal level display (visual and acoustic)
- 4 digit LED
- Infra-red remote control
- DiSEqC™ 1.0
- Power switch

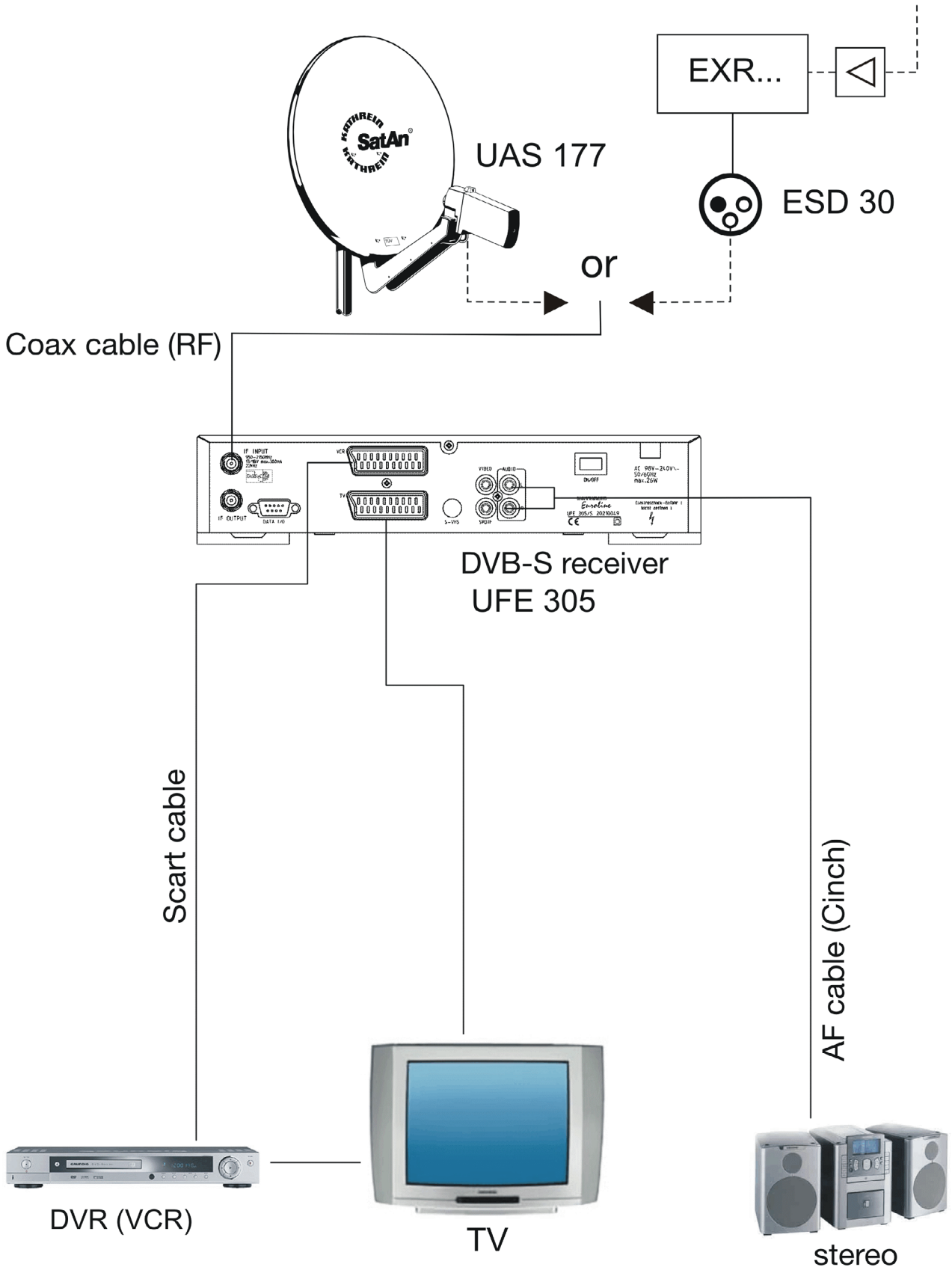
Functions and technical data

Technical data

Type		UFE 305/S
Order Number		20210049
		
Colour		Silver
RF range		
Sat-IF frequency range	MHz	950-2,150
Input level range/impedance	db μ V	44-83
Reception threshold (EB/NO)	dB	≤ 4.5
TV system Video		
Modulation, FEC, de-multiplexer		DVB-S standard
Video resolution		CCIR 601 (720x576)
Decoding		MPEG-1 and 2 compatible
Input data rate	MS/s	2-45
Bit rate	Mbit/s	1.5-15
Voltage/impedance	V/ Ω	1/75
S/N	dB	≥ 53
Audio		
Decoding		MPEG-1 and 2, layer 1 and 2
Sampling rate	kHz	32/44,1/48
Frequency range/voltage	kHz/mV	0.04-20/770
Processor		
Memory		
-FLASH	MB	1
-SDRAM	MB	8
Processor pulse frequency	MHz	81
Power supply		
Power supply voltage	V/Hz	80-260/50-60,
Power consumption	W	Max. 26
Power consumption (standby mode)	W	10
LNB supply	V	14/18 (500 mA at max.)
Control signal	kHz	22/DiSEqC TM 1.0
Connections		
Sat-IF input/output		2 x F socket
TV/VCR output		2 x Scart
S-VHS output		Hosiden socket
Audio output (analogue)		2 x Cinch (left and right)
Audio output (electrical)		Cinch (SPDIF format), 2.0 stereo
Interface		RS 232, Sub D 9-pole
General		
Ambient temperature range (operating)	$^{\circ}$ C	+5 to +40
Dimensions (W x H x D)	mm	298 x 65 x 223
Weight	kg	1.5
Packing unit	pc.	1/4

Connection diagram

Connection diagram of a DVB-S receiver connected to a TV set, video recorder and a stereo



936.2556/C/0705/ZWT – Technical data subject to change!

internet: <http://www.kathrein.de>

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KATHREIN

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